

SEQUENCE LISTING

<110> KYOWA HAKKO KOGYO CO., LTD.,

<120> NOVEL POLYPEPTIDE

<130> 766.52

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<160> 18

<170> PatentIn Ver. 2.0

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Cys	Ser	Gly	Ser	Val	Met	Ser	Glu	Arg	Val	Ser	Gly	Leu	Ala	Gly	Ser	
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Val	Lys	Glu	Leu	Met	Pro	Leu	Val	Val	Asn	Val	Leu	Glu	Asn	Leu	Asp	
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Gln	Thr	Arg	Gln	Leu	Glu	Leu	Lys	Ala	Lys	Asn	Tyr	Ala	Asp	Gln	Ile	
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gaa caa gag aag aaa gaa ctc cag atc cag gta gaa cat tat gag ttt 499
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Asp	Ser	Thr	Leu	Arg	Leu	Tyr	His	Ala	His	Thr	His	Gln	His	Leu	Gln	
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Asp	Val	Asp	Ile	Glu	Pro	Tyr	Val	Ser	Lys	Met	Leu	Gly	Thr	Gly	Lys	
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 Arg Leu Trp Val Gly Thr Gly Asn Gly Val Val Ile Ser Ile Pro Leu
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 Thr Glu Thr Val Val Leu His Arg Gly Gln Leu Leu Gly Leu Arg Ala
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 Asn Lys Thr Ser Pro Thr Ser Gly Glu Gly Thr Arg Pro Gly Gly Ile
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 Arg Asp Ala Val Lys Phe Phe Val Ser Val Pro Gly Asn Val Leu Ala
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 Thr Leu Asn Gly Ser Val Leu Asp Ser Pro Ser Glu Gly Pro Gly Pro
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 gct gca ccc gct gca gat gct gag ggc cag aag ttg aag aat gca ctg 3955
 Ala Ala Pro Ala Ala Asp Ala Glu Gly Gln Lys Leu Lys Asn Ala Leu
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 gtg ctg agt ggt ggt gaa ggt tac att gac ttc cgt atc gga gac gga 4003
 Val Leu Ser Gly Gly Glu Gly Tyr Ile Asp Phe Arg Ile Gly Asp Gly
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 Glu Asp Asp Glu Thr Glu Glu Cys Ala Gly Asp Val Asn Gln Thr Lys
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 ccc tcg ttg tcc aag gct gag cgc agc cac atc atc gtg tgg cag gtg 4099
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 Ser Tyr Thr Pro Glu
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Pro Pro Ile Met Asn Gly Pro Met His Pro Arg Pro Leu Val Ala Leu
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Leu Asp Gly Arg Asp Cys Thr Val Glu Met Pro Ile Leu Lys Asp Val
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gcc aca gta gcc ttc tgt gat gca cag tcc aca cag gag atc cat gag 199
Ala Thr Val Ala Phe Cys Asp Ala Gln Ser Thr Gln Glu Ile His Glu
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aag gta ctg aat gag gct gtg ggt gcc ctg atg tac cat acc atc aca 247
Lys Val Leu Asn Glu Ala Val Gly Ala Leu Met Tyr His Thr Ile Thr
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ctg acc aga gaa gat ctg gag aag ttt aaa gct ctt aga atc atc gtc 295
Leu Thr Arg Glu Asp Leu Glu Lys Phe Lys Ala Leu Arg Ile Ile Val
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cga att ggc agc ggg ttt gac aat atc gac atc aag tca gct ggg gat 343
Arg Ile Gly Ser Gly Phe Asp Asn Ile Asp Ile Lys Ser Ala Gly Asp
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Leu Gly Ile Ala Val Cys Asn Val Pro Ala Ala Ser Val Glu Glu Thr
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gca gac tcc acc ctg tgc cac atc ctg aac ctg tac cga cga acc acc 439
Ala Asp Ser Thr Leu Cys His Ile Leu Asn Leu Tyr Arg Arg Thr Thr
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Trp Leu His Gln Ala Leu Arg Glu Gly Thr Arg Val Gln Ser Val Glu
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cag atc cga gag gtg gct tca gga gct gcc agg atc cgt gga gag acc 535
Gln Ile Arg Glu Val Ala Ser Gly Ala Ala Arg Ile Arg Gly Glu Thr
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Leu Gly Ile Ile Gly Leu Gly Arg Val Gly Gln Ala Val Ala Leu Arg
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gca aag gct ttt ggc ttc aac gtc ctc ttc tat gat cca tac cta tct 631
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Asp Leu Leu Phe His Ser Asp Cys Val Thr Leu His Cys Gly Leu Asn	
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Glu His Asn His His Leu Ile Asn Asp Phe Thr Val Lys Gln Met Arg	
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Gln Gly Ala Phe Leu Val Asn Thr Ala Arg Gly Gly Leu Val Asp Glu	
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Lys Ala Val Ala Gln Ala Leu Lys Glu Gly Arg Ile Arg Gly Ala Ala	
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Leu Asp Val His Glu Ser Glu Pro Phe Ser Phe Ser Gln Gly Pro Leu	
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Lys Asp Ala Pro Asn Leu Ile Cys Thr Pro His Ala Ala Trp Tyr Ser	
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Glu Gln Ala Ser Ile Glu Met Arg Glu Glu Ala Ala Arg Glu Ile Arg	
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Arg Ala Ile Thr Gly Arg Ile Pro Asp Ser Leu Lys Asn Cys Val Asn	
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Lys Asp His Leu Thr Ala Ala Thr His Trp Ala Ser Met Asp Pro Ala	
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Val Val His Pro Glu Leu Asn Gly Ala Ala Tyr Ser Arg Tyr Pro Pro	
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Gly Val Val Ser Val Ala Pro Thr Gly Ile Pro Ala Ala Val Glu Gly	
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Ile Val Pro Ser Ala Met Ser Leu Ser His Gly Leu Pro Pro Val Ala	
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His Pro Pro His Ala Pro Ser Pro Gly Gln Thr Val Lys Pro Glu Ala	
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Asp Arg Asp His Thr Ser Asp Gln Leu	
425 430	

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Ile Thr		Ser Arg		Ile Lys		Asn Leu		Leu Arg		Ser Pro		Ser Ile		Lys Leu				
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cgc aga		agt aaa		gca gga		aac cgg		aga gag		gac ctc		agc tcc		aag gta				269
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acc ttg		gag aag		gtc ctg		gga gtg		aca gta		tct gga		gga aga		gga ctt				317
Thr Leu		Glu Lys		Val Leu		Gly Val		Thr Val		Ser Gly		Gly Arg		Gly Leu				
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Ala Cys		Glu Pro		Arg Ser		Gly Leu		Val Val		Ala Tyr		Pro Ala		Gly Cys		Val		
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Val Val		Leu Phe		Asn Pro		Arg Lys		His His		Gln His		His Ile		Leu Asn				
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agc tcc		agg aaa		acc att		act gcc		ctt gcc		ttc tcc		cct gat		ggc aag				461
Ser Ser		Arg Lys		Thr Ile		Thr Ala		Leu Ala		Phe Ser		Pro Asp		Gly Lys				
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Tyr Leu		Val Thr		Gly Glu		Ser Gly		His Met		Pro Ala		Val Arg		Val Trp				
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Asp Val		Ala Glu		Arg Ser		Gln Val		Ala Glu		Leu Gln		Glu His		Lys Tyr				
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ggt gtg		gct tgt		gtg gct		ttc tcc		cca agt		gcc aag		tac att		gtg tct				605
Gly Val		Ala Cys		Val Ala		Phe Ser		Pro Pro		Ala Lys		Tyr Ile		Val Ser				
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Asn	Ile	Val	Val	Ala	Ser	Asn	Lys	Val	Ser	Ser	Arg	Val	Thr	Ala	Val	
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Arg	Leu	Leu	Asp	Lys	Trp	Val	Glu	Leu	Arg	Asn	Thr	Asp	Ser	Phe	Thr	
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Pro	Lys	Lys	Val	Gly	Lys	Val	Tyr	Ser	Ala	Leu	Tyr	His	Ser	Ser	Cys	
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Glu	Asp	Glu	Gly	Thr	Glu	Glu	Glu	Glu	Leu	Pro	Ala	Leu	Pro	Ile	Leu		
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Leu	Arg	Ser	Leu	Ser	His	Trp	Glu	Met	Ser	Arg	Ala	Gln	Glu	Thr	Met		
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Gln	Asp	Ser	Leu	Ala	Val	Ser	Pro	Ala	Gly	Pro	Gly	Lys	His	Gly	Pro		
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Gln	Ala	Pro	Glu	Leu	Ser	Cys	Val	Ser	Gln	Asn	Glu	Arg	Ala	Pro	Arg		
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Met	Tyr	Pro	Gly	Ser	Arg	Gly	Ser	Glu	Lys	His	Ser	Pro	Asp	Ser	Ala		
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Thr	Ala	Pro	Gly	Gly	Pro	Ala	Arg	Val	Leu	Glu	Arg	Thr	Glu	Ser	Arg		
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Gln Val Ser Gln Val Ser Gly Glu Gln Leu Lys Gly Ser Gly Ala Thr	
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Pro Lys Gln Val Ala Pro Val Leu Leu Thr Arg Arg Arg Asn Asn Leu	
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Asp Asn Ser Trp Ala Ser Lys Lys Met Ala Ala Thr Arg Pro Leu Ala	
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Gly Leu Gln Lys Ala Gln Ser Val His Ser Leu Val Pro Gln Asp Glu	
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Ser Tyr Gln Asn His Thr Thr Ser Ser Met Ala Lys Leu Ala Arg Ser	
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Ile Ser Val Gly Glu Asn Pro Gly Leu Ala Thr Glu Pro Gln Ala Pro	
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gca ccg atc cga atc tca cca ttc aac aaa cta gct ctg cct agc agg	4013
Ala Pro Ile Arg Ile Ser Pro Phe Asn Lys Leu Ala Leu Pro Ser Arg	
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Glu Gln Ser Gly Pro Leu Arg Glu Pro Arg Lys Ala His Thr Thr Val	
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Glu Lys His Ser Cys Leu Gly Glu Gly Thr Thr His Lys Ser Arg Thr	
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gag tgc cag gct tat cct gga ccc aac cac ccc tgt cgc cag caa ctg	4253

Glu Cys Gln Ala Tyr Pro Gly Pro Asn His Pro Cys Arg Gln Gln Leu	
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cca gtc aac aac ctt ctc caa gct gag agc ttg cag ccc ctg tcc cct	4301
Pro Val Asn Asn Leu Leu Gln Ala Glu Ser Leu Gln Pro Leu Ser Pro	
1370 1375 1380	
gag aag act cgt aac ccc gtg gaa agc agc agg cca ggg gta gcc ctg	4349
Glu Lys Thr Arg Asn Pro Val Glu Ser Ser Arg Pro Gly Val Ala Leu	
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Ser Gln Asp Ser Glu Leu Ala Leu Ser Leu Gln Gln Cys Glu Gln Leu	
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Val Ala Glu Leu Gln Gly Asn Val Arg Gln Ala Val Glu Leu Tyr Arg	
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Ala Val Thr Ser Cys Lys Thr Pro Ser Ala Glu Gln Ser His Ile Thr	
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Arg Leu Leu Arg Asp Thr Phe Ser Pro Val Arg Gln Glu Leu Glu Val	
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Leu Ala Gly Ala Val Leu Ser Ser Pro Gly Gly Ser Pro Gly Ala Val	
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Ala Ala Glu Gln Thr Gln Ala Leu Leu Glu Gln Tyr Ser Glu Leu Leu	
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Leu Gly Leu Arg Pro Thr Ser Val Asp Pro Ala Leu Arg Arg Arg Arg	
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Arg Gly Pro Arg Asn Lys Lys Arg Gly Trp Arg Arg Leu Ala Glu Glu	

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Pro Leu Gly Leu Glu Val Asp Gln Phe Leu Glu Asp Val Arg Leu Gln			
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Glu Arg Thr Thr Gly Gly Leu Leu Ala Glu Ala Pro Asn Glu Lys Leu			
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Phe Phe Val Asp Thr Gly Phe Lys Arg Lys Glu Pro Arg Lys Lys Arg			
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acc ttg gtc cag aag aag tca cag cgt ctc cag aaa ccc tta cgg gtt			336
Thr Leu Val Gln Lys Lys Ser Gln Arg Leu Gln Lys Pro Leu Arg Val			
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Asp Leu Ala Leu Glu Asn His Ser Lys Ile Pro Ala Pro Lys Asp Ile			
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Leu Ala His Gln Val Pro Asn Ala Lys Lys Leu Arg Arg Lys Glu Glu			
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Leu Trp Glu Lys Leu Ala Lys Gln Gly Glu Leu Pro Arg Asp Val Arg			
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Lys Ala Gln Ala Arg Leu Leu Ser Pro Pro Thr Pro Lys Ala Lys Pro			
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Gly Pro Gln Asp Ile Ile Glu Arg Pro Phe Tyr Asp Leu Trp Asn Pro			
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Asp Asn Pro Leu Asp Thr Pro Leu Ile Gly Gln Asp Ala Phe Phe Leu			
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Glu Gln Thr Lys Lys Lys Gly Val Arg Arg Pro Gln Arg Leu His Ile			
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Pro Ala Leu Arg Arg Arg Arg Arg Gly Pro Arg Asn Lys Lys Arg Gly
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tgg agg agg ctg gcc gag gag ccg ctg ggg tta gag gtc gac cag ttc 195
Trp Arg Arg Leu Ala Glu Glu Pro Leu Gly Leu Glu Val Asp Gln Phe
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Leu Glu Asp Val Arg Leu Gln Glu Arg Thr Thr Gly Gly Leu Leu Ala
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Glu Ala Pro Asn Glu Lys Leu Phe Phe Val Asp Thr Gly Phe Lys Arg
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Lys Glu Pro Arg Lys Lys Arg Thr Leu Val Gln Lys Lys Ser Gln Arg
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Leu Gln Lys Pro Leu Arg Val Asp Leu Ala Leu Glu Asn His Ser Lys
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Ile Pro Ala Pro Lys Asp Ile Leu Ala His Gln Val Pro Asn Ala Lys
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aag ctg agg cga aag gag gag tta tgg gag aaa ctg gca aag cag ggc 483
Lys Leu Arg Arg Lys Glu Glu Leu Trp Glu Lys Leu Ala Lys Gln Gly
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Glu Leu Pro Arg Asp Val Arg Lys Ala Gln Ala Arg Leu Leu Ser Pro
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ccc aca cca aag gcc aaa cct ggg ccc cag gac atc att gag cga ccc 579
Pro Thr Pro Lys Ala Lys Pro Gly Pro Gln Asp Ile Ile Glu Arg Pro
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ttc tat gac ctg tgg aac cca gac aac cct ctg gac acg cct ttg att 627
Phe Tyr Asp Leu Trp Asn Pro Asp Asn Pro Leu Asp Thr Pro Leu Ile
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ggt cag gat gca ttt ttt ctg gaa cag acc aag aag aaa ggc gtg agg 675
Gly Gln Asp Ala Phe Phe Leu Glu Gln Thr Lys Lys Lys Gly Val Arg
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Ile	Arg	Arg	Leu	Ala	Glu	Ala	Asp	Lys	Pro	Arg	Arg	Leu	Gly	Arg	Leu		
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Gly	Ser	Leu	Arg	Thr	Leu	Lys	Pro	Glu	Gly	His	Ile	Leu	Arg	Asp	Arg		
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Glu Leu Leu Arg Glu Asp Asn Glu Gln Leu Leu Thr Gln Tyr Glu Arg
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Asp Ala Leu Glu Gln Glu Lys Lys Glu Leu Gln Ile Gln Val Glu His
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Tyr Glu Phe Gln Thr Arg Gln Leu Glu Leu Lys Ala Lys Asn Tyr Ala
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Asp Gln Ile Ser Arg Leu Glu Glu Arg Glu Ser Glu Met Lys Lys Glu
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Tyr Asn Ala Leu His Gln Arg His Thr Glu Met Ile Gln Thr Tyr Val
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Glu His Ile Glu Arg Ser Lys Met Gln Gln Val Gly Gly Ser Gly Gln
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Thr Glu Ser Ser Leu Pro Gly Arg Arg Lys Glu Arg Pro Thr Ser Leu
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Asn Val Phe Pro Leu Ala Asp Gly Met Cys Pro Asn Asp Glu Met Ser
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 Asp Val Cys Pro Glu Thr Arg Leu Glu Arg Thr Gly Ser Ser Pro Thr
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 Gln Gly Ile Val Asn Lys Ala Phe Gly Ile Asn Thr Asp Ser Leu Tyr
 340 345 350
 His Glu Leu Ser Thr Ala Gly Ser Glu Val Ile Gly Asp Val Asp Glu
 355 360 365
 Gly Ala Asp Leu Leu Gly Glu Phe Ser Val Arg Asp Asp Phe Phe Gly
 370 375 380
 Met Gly Lys Glu Val Gly Asn Leu Leu Leu Glu Asn Ser Gln Leu Leu
 385 390 395 400
 Glu Thr Lys Asn Ala Leu Asn Val Val Lys Asn Asp Leu Ile Ala Lys
 405 410 415
 Val Asp Gln Leu Ser Gly Glu Gln Glu Val Leu Lys Gly Glu Leu Glu
 420 425 430
 Ala Ala Lys Gln Ala Lys Val Lys Leu Glu Asn Arg Ile Lys Glu Leu
 435 440 445
 Glu Glu Glu Leu Lys Arg Val Lys Ser Glu Ala Val Thr Ala Arg Arg
 450 455 460
 Glu Pro Arg Glu Glu Val Glu Asp Val Ser Ser Tyr Leu Cys Thr Glu
 465 470 475 480
 Leu Asp Lys Ile Pro Met Ala Gln Arg Arg Arg Phe Thr Arg Val Glu
 485 490 495
 Met Ala Arg Val Leu Met Glu Arg Asn Gln Tyr Lys Glu Arg Leu Met
 500 505 510
 Glu Leu Gln Glu Ala Val Arg Trp Thr Glu Met Ile Arg Ala Ser Arg
 515 520 525
 Glu His Pro Ser Val Gln Glu Lys Lys Lys Ser Thr Ile Trp Gln Phe
 530 535 540
 Phe Ser Arg Leu Phe Ser Ser Ser Ser Pro Pro Pro Ala Lys Arg
 545 550 555 560

Ser Tyr Pro Ser Val Asn Ile His Tyr Lys Ser Pro Thr Ala Ala Gly
 565 570 575
 Phe Ser Gln Arg Arg Ser His Ala Leu Cys Gln Ile Ser Ala Gly Ser
 580 585 590
 Arg Pro Leu Glu Phe Phe Pro Asp Asp Asp Cys Thr Ser Ser Ala Arg
 595 600 605
 Arg Glu Gln Lys Arg Glu Gln Tyr Arg Gln Val Arg Glu His Val Arg
 610 615 620
 Asn Asp Asp Gly Arg Leu Gln Ala Cys Gly Trp Ser Leu Pro Ala Lys
 625 630 635 640
 Tyr Lys Gln Leu Ser Pro Asn Gly Gly Gln Glu Asp Thr Arg Met Lys
 645 650 655
 Asn Val Pro Val Pro Val Tyr Cys Arg Pro Leu Val Glu Lys Asp Pro
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 Ser Thr Lys Leu Trp Cys Ala Ala Gly Val Asn Leu Ser Gly Trp Lys
 675 680 685
 Pro His Glu Glu Asp Ser Ser Asn Gly Pro Lys Pro Val Pro Gly Arg
 690 695 700
 Asp Pro Leu Thr Cys Asp Arg Glu Gly Glu Gly Glu Pro Lys Ser Thr
 705 710 715 720
 His Pro Ser Pro Glu Lys Lys Lys Ala Lys Glu Thr Pro Glu Ala Asp
 725 730 735
 Ala Thr Ser Ser Arg Val Trp Ile Leu Thr Ser Thr Leu Thr Thr Ser
 740 745 750
 Lys Val Val Ile Ile Asp Ala Asn Gln Pro Gly Thr Ile Val Asp Gln
 755 760 765
 Phe Thr Val Cys Asn Ala His Val Leu Cys Ile Ser Ser Ile Pro Ala
 770 775 780
 Ala Ser Asp Ser Asp Tyr Pro Pro Gly Glu Met Phe Leu Asp Ser Asp
 785 790 795 800
 Val Asn Pro Glu Asp Ser Gly Ala Asp Gly Val Leu Ala Gly Ile Thr
 805 810 815
 Leu Val Gly Cys Ala Thr Arg Cys Asn Val Pro Arg Ser Asn Cys Ser
 820 825 830
 Ser Arg Gly Asp Thr Pro Val Leu Asp Lys Gly Gln Gly Asp Val Ala
 835 840 845
 Thr Thr Ala Asn Gly Lys Val Asn Pro Ser Gln Ser Thr Glu Glu Ala
 850 855 860
 Thr Glu Ala Thr Glu Val Pro Asp Pro Gly Pro Ser Glu Ser Glu Ala
 865 870 875 880

Thr Thr Val Arg Pro Gly Pro Leu Thr Glu His Val Phe Thr Asp Pro
 885 890 895
 Ala Pro Thr Pro Ser Ser Ser Thr Gln Pro Ala Ser Glu Asn Gly Ser
 900 905 910
 Glu Ser Asn Gly Thr Ile Val Gln Pro Gln Val Glu Pro Ser Gly Glu
 915 920 925
 Leu Ser Thr Thr Thr Ser Ser Ala Ala Pro Thr Met Trp Leu Gly Ala
 930 935 940
 Gln Asn Gly Trp Leu Tyr Val His Ser Ala Val Ala Asn Trp Lys Lys
 945 950 955 960
 Cys Leu His Ser Ile Lys Leu Lys Asp Ser Val Leu Ser Leu Val His
 965 970 975
 Val Lys Gly Arg Val Leu Val Ala Leu Ala Asp Gly Thr Leu Ala Ile
 980 985 990
 Phe His Arg Gly Glu Asp Gly Gln Trp Asp Leu Ser Asn Tyr His Leu
 995 1000 1005
 Met Asp Leu Gly His Pro His His Ser Ile Arg Cys Met Ala Val Val
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 Asn Asp Arg Val Trp Cys Gly Tyr Lys Asn Lys Val His Val Ile Gln
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 Pro Lys Thr Met Gln Ile Glu Lys Ser Phe Asp Ala His Pro Arg Arg
 1045 1050 1055
 Glu Ser Gln Val Arg Gln Leu Ala Trp Ile Gly Asp Gly Val Trp Val
 1060 1065 1070
 Ser Ile Arg Leu Asp Ser Thr Leu Arg Leu Tyr His Ala His Thr His
 1075 1080 1085
 Gln His Leu Gln Asp Val Asp Ile Glu Pro Tyr Val Ser Lys Met Leu
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 Gly Thr Gly Lys Leu Gly Phe Ser Phe Val Arg Ile Thr Ala Leu Leu
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 Ile Ala Gly Asn Arg Leu Trp Val Gly Thr Gly Asn Gly Val Val Ile
 1125 1130 1135
 Ser Ile Pro Leu Thr Glu Thr Val Val Leu His Arg Gly Gln Leu Leu
 1140 1145 1150
 Gly Leu Arg Ala Asn Lys Thr Ser Pro Thr Ser Gly Glu Gly Thr Arg
 1155 1160 1165
 Pro Gly Gly Ile Ile His Val Tyr Gly Asp Asp Ser Ser Asp Lys Ala
 1170 1175 1180
 Ala Ser Ser Phe Ile Pro Tyr Cys Ser Met Ala Gln Ala Gln Leu Cys
 1185 1190 1195 1200

Phe His Gly His Arg Asp Ala Val Lys Phe Phe Val Ser Val Pro Gly
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 Asn Val Leu Ala Thr Leu Asn Gly Ser Val Leu Asp Ser Pro Ser Glu
 1220 1225 1230
 Gly Pro Gly Pro Ala Ala Pro Ala Ala Asp Ala Glu Gly Gln Lys Leu
 1235 1240 1245
 Lys Asn Ala Leu Val Leu Ser Gly Gly Glu Gly Tyr Ile Asp Phe Arg
 1250 1255 1260
 Ile Gly Asp Gly Glu Asp Asp Glu Thr Glu Glu Cys Ala Gly Asp Val
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 Asn Gln Thr Lys Pro Ser Leu Ser Lys Ala Glu Arg Ser His Ile Ile
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 Val Trp Gln Val Ser Tyr Thr Pro Glu
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 Ala Gly Ser Ile Tyr Arg Glu Phe Glu Arg Leu Ile His Cys Tyr Asp
 35 40 45
 Glu Glu Val Val Lys Glu Leu Met Pro Leu Val Val Asn Val Leu Glu
 50 55 60
 Asn Leu Asp Ser Val Leu Ser Glu Asn Gln Glu His Glu Val Glu Leu
 65 70 75 80
 Glu Leu Leu Arg Glu Asp Asn Glu Gln Leu Leu Thr Gln Tyr Glu Arg
 85 90 95
 Glu Lys Ala Leu Arg Lys Gln Ala Glu Glu Lys Phe Ile Glu Phe Glu
 100 105 110
 Asp Ala Leu Glu Gln Glu Lys Lys Glu Leu Gln Ile Gln Val Glu His
 115 120 125
 Tyr Glu Phe Gln Thr Arg Gln Leu Glu Leu Lys Ala Lys Asn Tyr Ala
 130 135 140
 Asp Gln Ile Ser Arg Leu Glu Glu Arg Glu Ser Glu Met Lys Lys Glu
 145 150 155 160
 Tyr Asn Ala Leu His Gln Arg His Thr Glu Met Ile Gln Thr Tyr Val
 165 170 175

Glu	His	Ile	Glu 180	Arg	Ser	Lys	Met	Gln 185	Gln	Val	Gly	Gly	Ser 190	Gly	Gln
Thr	Glu	Ser 195	Ser	Leu	Pro	Gly	Arg 200	Ser	Pro	Arg	Gln	Ser 205	Trp	Arg	Lys
Ser	Arg 210	Lys	Glu	Arg	Pro	Thr 215	Ser	Leu	Asn	Val	Phe 220	Pro	Leu	Ala	Asp
Gly 225	Met	Cys	Pro	Asn	Asp 230	Glu	Met	Ser	Glu	Ser 235	Gly	Gln	Ser	Ser	Ala 240
Ala	Ala	Thr	Pro	Ser 245	Thr	Thr	Gly	Thr	Lys 250	Ser	Asn	Thr	Pro	Thr 255	Ser
Ser	Val	Pro	Ser 260	Ala	Ala	Val	Thr	Pro 265	Leu	Asn	Glu	Ser	Leu 270	Gln	Pro
Leu	Gly	Asp 275	Tyr	Val	Ser	Val	Thr 280	Lys	Asn	Asn	Lys	Gln 285	Ala	Arg	Glu
Lys	Arg 290	Asn	Ser	Arg	Asn	Met 295	Glu	Val	Gln	Val	Thr 300	Gln	Glu	Met	Arg
Asn 305	Val	Ser	Ile	Gly	Met 310	Gly	Ser	Ser	Asp	Glu 315	Trp	Ser	Asp	Val	Gln 320
Asp	Ile	Ile	Asp	Ser 325	Thr	Pro	Glu	Leu	Asp 330	Val	Cys	Pro	Glu	Thr 335	Arg
Leu	Glu	Arg	Thr 340	Gly	Ser	Ser	Pro	Thr 345	Gln	Gly	Ile	Val	Asn 350	Lys	Ala
Phe	Gly	Ile 355	Asn	Thr	Asp	Ser	Leu 360	Tyr	His	Glu	Leu	Ser 365	Thr	Ala	Gly
Ser	Glu 370	Val	Ile	Gly	Asp	Val 375	Asp	Glu	Gly	Ala	Asp 380	Leu	Leu	Gly	Glu
Phe 385	Ser	Val	Arg	Asp	Asp 390	Phe	Phe	Gly	Met	Gly 395	Lys	Glu	Val	Gly	Asn 400
Leu	Leu	Leu	Glu	Asn 405	Ser	Gln	Leu	Leu	Glu 410	Thr	Lys	Asn	Ala	Leu 415	Asn
Val	Val	Lys	Asn 420	Asp	Leu	Ile	Ala	Lys 425	Val	Asp	Gln	Leu	Ser 430	Gly	Glu
Gln	Glu	Val 435	Leu	Lys	Gly	Glu	Leu 440	Glu	Ala	Ala	Lys	Gln 445	Ala	Lys	Val
Lys	Leu 450	Glu	Asn	Arg	Ile	Lys 455	Glu	Leu	Glu	Glu	Glu 460	Leu	Lys	Arg	Val
Lys 465	Ser	Glu	Ala	Val	Thr 470	Ala	Arg	Arg	Glu	Pro 475	Arg	Glu	Glu	Val	Glu 480
Asp	Val	Ser	Ser	Tyr 485	Leu	Cys	Thr	Glu	Leu 490	Asp	Lys	Ile	Pro	Met 495	Ala

Gln	Arg	Arg	Arg	Phe	Thr	Arg	Val	Glu	Met	Ala	Arg	Val	Leu	Met	Glu	
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Arg	Asn	Gln	Tyr	Lys	Glu	Arg	Leu	Met	Glu	Leu	Gln	Glu	Ala	Val	Arg	
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Trp	Thr	Glu	Met	Ile	Arg	Ala	Ser	Arg	Glu	His	Pro	Ser	Val	Gln	Glu	
	530					535					540					
Lys	Lys	Lys	Ser	Thr	Ile	Trp	Gln	Phe	Phe	Ser	Arg	Leu	Phe	Ser	Ser	
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Ser	Ser	Ser	Pro	Pro	Pro	Ala	Lys	Arg	Ser	Tyr	Pro	Ser	Val	Asn	Ile	
				565					570					575		
His	Tyr	Lys	Ser	Pro	Thr	Ala	Ala	Gly	Phe	Ser	Gln	Arg	Arg	Ser	His	
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Ala	Leu	Cys	Gln	Ile	Ser	Ala	Gly	Ser	Arg	Pro	Leu	Glu	Phe	Phe	Pro	
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Asp	Asp	Asp	Cys	Thr	Ser	Ser	Ala	Arg	Arg	Glu	Gln	Lys	Arg	Glu	Gln	
	610					615					620					
Tyr	Arg	Gln	Val	Arg	Glu	His	Val	Arg	Asn	Asp	Asp	Gly	Arg	Leu	Gln	
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Ala	Cys	Gly	Trp	Ser	Leu	Pro	Ala	Lys	Tyr	Lys	Gln	Leu	Ser	Pro	Asn	
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Gly	Gly	Gln	Glu	Asp	Thr	Arg	Met	Lys	Asn	Val	Pro	Val	Pro	Val	Tyr	
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Cys	Arg	Pro	Leu	Val	Glu	Lys	Asp	Pro	Ser	Thr	Lys	Leu	Trp	Cys	Ala	
		675					680					685				
Ala	Gly	Val	Asn	Leu	Ser	Gly	Trp	Lys	Pro	His	Glu	Glu	Asp	Ser	Ser	
	690					695					700					
Asn	Gly	Pro	Lys	Pro	Val	Pro	Gly	Arg	Asp	Pro	Leu	Thr	Cys	Asp	Arg	
705					710					715					720	
Glu	Gly	Glu	Gly	Glu	Pro	Lys	Ser	Thr	His	Pro	Ser	Pro	Glu	Lys	Lys	
				725					730					735		
Lys	Ala	Lys	Glu	Thr	Pro	Glu	Ala	Asp	Ala	Thr	Ser	Ser	Arg	Val	Trp	
			740					745					750			
Ile	Leu	Thr	Ser	Thr	Leu	Thr	Thr	Ser	Lys	Val	Val	Ile	Ile	Asp	Ala	
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Asn	Gln	Pro	Gly	Thr	Ile	Val	Asp	Gln	Phe	Thr	Val	Cys	Asn	Ala	His	
	770					775					780					
Val	Leu	Cys	Ile	Ser	Ser	Ile	Pro	Ala	Ala	Ser	Asp	Ser	Asp	Tyr	Pro	
785					790					795					800	
Pro	Gly	Glu	Met	Phe	Leu	Asp	Ser	Asp	Val	Asn	Pro	Glu	Asp	Ser	Gly	
				805					810					815		

Ala Asp Gly Val Leu Ala Gly Ile Thr Leu Val Gly Cys Ala Thr Arg
 820 825 830
 Cys Asn Val Pro Arg Ser Asn Cys Ser Ser Arg Gly Asp Thr Pro Val
 835 840 845
 Leu Asp Lys Gly Gln Gly Asp Val Ala Thr Thr Ala Asn Gly Lys Val
 850 855 860
 Asn Pro Ser Gln Ser Thr Glu Glu Ala Thr Glu Ala Thr Glu Val Pro
 865 870 875 880
 Asp Pro Gly Pro Ser Glu Ser Glu Ala Thr Thr Val Arg Pro Gly Pro
 885 890 895
 Leu Thr Glu His Val Phe Thr Asp Pro Ala Pro Thr Pro Ser Ser Ser
 900 905 910
 Thr Gln Pro Ala Ser Glu Asn Gly Ser Glu Ser Asn Gly Thr Ile Val
 915 920 925
 Gln Pro Gln Val Glu Pro Ser Gly Glu Leu Ser Thr Thr Thr Ser Ser
 930 935 940
 Ala Ala Pro Thr Met Trp Leu Gly Ala Gln Asn Gly Trp Leu Tyr Val
 945 950 955 960
 His Ser Ala Val Ala Asn Trp Lys Lys Cys Leu His Ser Ile Lys Leu
 965 970 975
 Lys Asp Ser Val Leu Ser Leu Val His Val Lys Gly Arg Val Leu Val
 980 985 990
 Ala Leu Ala Asp Gly Thr Leu Ala Ile Phe His Arg Gly Glu Asp Gly
 995 1000 1005
 Gln Trp Asp Leu Ser Asn Tyr His Leu Met Asp Leu Gly His Pro His
 1010 1015 1020
 His Ser Ile Arg Cys Met Ala Val Val Asn Asp Arg Val Trp Cys Gly
 1025 1030 1035 1040
 Tyr Lys Asn Lys Val His Val Ile Gln Pro Lys Thr Met Gln Ile Glu
 1045 1050 1055
 Lys Ser Phe Asp Ala His Pro Arg Arg Glu Ser Gln Val Arg Gln Leu
 1060 1065 1070
 Ala Trp Ile Gly Asp Gly Val Trp Val Ser Ile Arg Leu Asp Ser Thr
 1075 1080 1085
 Leu Arg Leu Tyr His Ala His Thr His Gln His Leu Gln Asp Val Asp
 1090 1095 1100
 Ile Glu Pro Tyr Val Ser Lys Met Leu Gly Thr Gly Lys Leu Gly Phe
 1105 1110 1115 1120
 Ser Phe Val Arg Ile Thr Ala Leu Leu Ile Ala Gly Asn Arg Leu Trp
 1125 1130 1135

Val Gly Thr Gly Asn Gly Val Val Ile Ser Ile Pro Leu Thr Glu Thr
 1140 1145 1150
 Val Val Leu His Arg Gly Gln Leu Leu Gly Leu Arg Ala Asn Lys Thr
 1155 1160 1165
 Ser Pro Thr Ser Gly Glu Gly Thr Arg Pro Gly Gly Ile Ile His Val
 1170 1175 1180
 Tyr Gly Asp Asp Ser Ser Asp Lys Ala Ala Ser Ser Phe Ile Pro Tyr
 1185 1190 1195 1200
 Cys Ser Met Ala Gln Ala Gln Leu Cys Phe His Gly His Arg Asp Ala
 1205 1210 1215
 Val Lys Phe Phe Val Ser Val Pro Gly Asn Val Leu Ala Thr Leu Asn
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 Gly Ser Val Leu Asp Ser Pro Ser Glu Gly Pro Gly Pro Ala Ala Pro
 1235 1240 1245
 Ala Ala Asp Ala Glu Gly Gln Lys Leu Lys Asn Ala Leu Val Leu Ser
 1250 1255 1260
 Gly Gly Glu Gly Tyr Ile Asp Phe Arg Ile Gly Asp Gly Glu Asp Asp
 1265 1270 1275 1280
 Glu Thr Glu Glu Cys Ala Gly Asp Val Asn Gln Thr Lys Pro Ser Leu
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 Ser Lys Ala Glu Arg Ser His Ile Ile Val Trp Gln Val Ser Tyr Thr
 1300 1305 1310

Pro Glu

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<400> 11

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 Asp Asp Tyr Cys Ser Gly Ser Val Met Ser Glu Arg Val Ser Gly Leu
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 Ala Gly Ser Ile Tyr Arg Glu Phe Glu Arg Leu Ile His Cys Tyr Asp
 35 40 45
 Glu Glu Val Val Lys Glu Leu Met Pro Leu Val Val Asn Val Leu Glu
 50 55 60
 Asn Leu Asp Ser Val Leu Ser Glu Asn Gln Glu His Glu Val Glu Leu
 65 70 75 80
 Glu Leu Leu Arg Glu Asp Asn Glu Gln Leu Leu Thr Gln Tyr Glu Arg

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Met	Gly	Lys	Glu	Val	Gly	Asn	Leu	Leu	Leu	Glu	Asn	Ser	Gln	Leu	Leu				
			420					425					430						
Glu	Thr	Lys	Asn	Ala	Leu	Asn	Val	Val	Lys	Asn	Asp	Leu	Ile	Ala	Lys				
		435					440					445							
Val	Asp	Gln	Leu	Ser	Gly	Glu	Gln	Glu	Val	Leu	Lys	Gly	Glu	Leu	Glu				
	450					455					460								
Ala	Ala	Lys	Gln	Ala	Lys	Val	Lys	Leu	Glu	Asn	Arg	Ile	Lys	Glu	Leu				
465					470					475					480				
Glu	Glu	Glu	Leu	Lys	Arg	Val	Lys	Ser	Glu	Ala	Val	Thr	Ala	Arg	Arg				
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Glu	Pro	Arg	Glu	Glu	Val	Glu	Asp	Val	Ser	Ser	Tyr	Leu	Cys	Thr	Glu				
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Leu	Asp	Lys	Ile	Pro	Met	Ala	Gln	Arg	Arg	Arg	Phe	Thr	Arg	Val	Glu				
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Met	Ala	Arg	Val	Leu	Met	Glu	Arg	Asn	Gln	Tyr	Lys	Glu	Arg	Leu	Met				
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Glu	Leu	Gln	Glu	Ala	Val	Arg	Trp	Thr	Glu	Met	Ile	Arg	Ala	Ser	Arg				
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Glu	His	Pro	Ser	Val	Gln	Glu	Lys	Lys	Lys	Ser	Thr	Ile	Trp	Gln	Phe				
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Phe	Ser	Arg	Leu	Phe	Ser	Ser	Ser	Ser	Ser	Pro	Pro	Pro	Ala	Lys	Arg				
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Ser	Tyr	Pro	Ser	Val	Asn	Ile	His	Tyr	Lys	Ser	Pro	Thr	Ala	Ala	Gly				
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Arg	Pro	Leu	Glu	Phe	Phe	Pro	Asp	Asp	Asp	Cys	Thr	Ser	Ser	Ala	Arg				
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Arg	Glu	Gln	Lys	Arg	Glu	Gln	Tyr	Arg	Gln	Val	Arg	Glu	His	Val	Arg				
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Asn	Asp	Asp	Gly	Arg	Leu	Gln	Ala	Cys	Gly	Trp	Ser	Leu	Pro	Ala	Lys				
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Tyr	Lys	Gln	Leu	Ser	Pro	Asn	Gly	Gly	Gln	Glu	Asp	Thr	Arg	Met	Lys				
		675					680					685							
Asn	Val	Pro	Val	Pro	Val	Tyr	Cys	Arg	Pro	Leu	Val	Glu	Lys	Asp	Pro				
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Ser	Thr	Lys	Leu	Trp	Cys	Ala	Ala	Gly	Val	Asn	Leu	Ser	Gly	Trp	Lys				
705					710					715					720				
Pro	His	Glu	Glu	Asp	Ser	Ser	Asn	Gly	Pro	Lys	Pro	Val	Pro	Gly	Arg				

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Asp	Pro	Leu	Thr	Cys	Asp	Arg	Glu	Gly	Glu	Gly	Glu	Pro	Lys	Ser	Thr				
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His	Pro	Ser	Pro	Glu	Lys	Lys	Lys	Ala	Lys	Glu	Thr	Pro	Glu	Ala	Asp				
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Ala	Thr	Ser	Ser	Arg	Val	Trp	Ile	Leu	Thr	Ser	Thr	Leu	Thr	Thr	Ser				
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Lys	Val	Val	Ile	Ile	Asp	Ala	Asn	Gln	Pro	Gly	Thr	Ile	Val	Asp	Gln				
785					790					795					800				
Phe	Thr	Val	Cys	Asn	Ala	His	Val	Leu	Cys	Ile	Ser	Ser	Ile	Pro	Ala				
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Ala	Ser	Asp	Ser	Asp	Tyr	Pro	Pro	Gly	Glu	Met	Phe	Leu	Asp	Ser	Asp				
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Val	Asn	Pro	Glu	Asp	Ser	Gly	Ala	Asp	Gly	Val	Leu	Ala	Gly	Ile	Thr				
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Leu	Val	Gly	Cys	Ala	Thr	Arg	Cys	Asn	Val	Pro	Arg	Ser	Asn	Cys	Ser				
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Ser	Arg	Gly	Asp	Thr	Pro	Val	Leu	Asp	Lys	Gly	Gln	Gly	Asp	Val	Ala				
865					870					875					880				
Thr	Thr	Ala	Asn	Gly	Lys	Val	Asn	Pro	Ser	Gln	Ser	Thr	Glu	Glu	Ala				
			885						890					895					
Thr	Glu	Ala	Thr	Glu	Val	Pro	Asp	Pro	Gly	Pro	Ser	Glu	Ser	Glu	Ala				
		900						905					910						
Thr	Thr	Val	Arg	Pro	Gly	Pro	Leu	Thr	Glu	His	Val	Phe	Thr	Asp	Pro				
		915					920					925							
Ala	Pro	Thr	Pro	Ser	Ser	Ser	Thr	Gln	Pro	Ala	Ser	Glu	Asn	Gly	Ser				
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Glu	Ser	Asn	Gly	Thr	Ile	Val	Gln	Pro	Gln	Val	Glu	Pro	Ser	Gly	Glu				
945					950				955						960				
Leu	Ser	Thr	Thr	Thr	Ser	Ser	Ala	Ala	Pro	Thr	Met	Trp	Leu	Gly	Ala				
				965					970					975					
Gln	Asn	Gly	Trp	Leu	Tyr	Val	His	Ser	Ala	Val	Ala	Asn	Trp	Lys	Lys				
		980						985					990						
Cys	Leu	His	Ser	Ile	Lys	Leu	Lys	Asp	Ser	Val	Leu	Ser	Leu	Val	His				
	995					1000						1005							
Val	Lys	Gly	Arg	Val	Leu	Val	Ala	Leu	Ala	Asp	Gly	Thr	Leu	Ala	Ile				
	1010					1015					1020								
Phe	His	Arg	Gly	Glu	Asp	Gly	Gln	Trp	Asp	Leu	Ser	Asn	Tyr	His	Leu				
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Met	Asp	Leu	Gly	His	Pro	His	His	Ser	Ile	Arg	Cys	Met	Ala	Val	Val				

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Asn Asp Arg Val Trp Cys Gly Tyr Lys Asn Lys Val His Val Ile Gln		
1060	1065	1070
Pro Lys Thr Met Gln Ile Glu Lys Ser Phe Asp Ala His Pro Arg Arg		
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Glu Ser Gln Val Arg Gln Leu Ala Trp Ile Gly Asp Gly Val Trp Val		
1090	1095	1100
Ser Ile Arg Leu Asp Ser Thr Leu Arg Leu Tyr His Ala His Thr His		
1105	1110	1115
Gln His Leu Gln Asp Val Asp Ile Glu Pro Tyr Val Ser Lys Met Leu		
1125	1130	1135
Gly Thr Gly Lys Leu Gly Phe Ser Phe Val Arg Ile Thr Ala Leu Leu		
1140	1145	1150
Ile Ala Gly Asn Arg Leu Trp Val Gly Thr Gly Asn Gly Val Val Ile		
1155	1160	1165
Ser Ile Pro Leu Thr Glu Thr Val Val Leu His Arg Gly Gln Leu Leu		
1170	1175	1180
Gly Leu Arg Ala Asn Lys Thr Ser Pro Thr Ser Gly Glu Gly Thr Arg		
1185	1190	1195
Pro Gly Gly Ile Ile His Val Tyr Gly Asp Asp Ser Ser Asp Lys Ala		
1205	1210	1215
Ala Ser Ser Phe Ile Pro Tyr Cys Ser Met Ala Gln Ala Gln Leu Cys		
1220	1225	1230
Phe His Gly His Arg Asp Ala Val Lys Phe Phe Val Ser Val Pro Gly		
1235	1240	1245
Asn Val Leu Ala Thr Leu Asn Gly Ser Val Leu Asp Ser Pro Ser Glu		
1250	1255	1260
Gly Pro Gly Pro Ala Ala Pro Ala Ala Asp Ala Glu Gly Gln Lys Leu		
1265	1270	1275
Lys Asn Ala Leu Val Leu Ser Gly Gly Glu Gly Tyr Ile Asp Phe Arg		
1285	1290	1295
Ile Gly Asp Gly Glu Asp Asp Glu Thr Glu Glu Cys Ala Gly Asp Val		
1300	1305	1310
Asn Gln Thr Lys Pro Ser Leu Ser Lys Ala Glu Arg Ser His Ile Ile		
1315	1320	1325
Val Trp Gln Val Ser Tyr Thr Pro Glu		
1330	1335	

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 <212> PRT

<213> Mouse

<400> 12

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Asp	Asp	Tyr	Cys	Ser	Gly	Ser	Val	Met	Ser	Glu	Arg	Val	Ser	Gly	Leu
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Ala	Gly	Ser	Ile	Tyr	Arg	Glu	Phe	Glu	Arg	Leu	Ile	His	Cys	Tyr	Asp
		35					40					45			
Glu	Glu	Val	Val	Lys	Glu	Leu	Met	Pro	Leu	Val	Val	Asn	Val	Leu	Glu
	50					55					60				
Asn	Leu	Asp	Ser	Val	Leu	Ser	Glu	Asn	Gln	Glu	His	Glu	Val	Glu	Leu
65					70					75					80
Glu	Leu	Leu	Arg	Glu	Asp	Asn	Glu	Gln	Leu	Leu	Thr	Gln	Tyr	Glu	Arg
				85					90					95	
Glu	Lys	Ala	Leu	Arg	Lys	Gln	Ala	Glu	Glu	Lys	Phe	Ile	Glu	Phe	Glu
			100					105					110		
Asp	Ala	Leu	Glu	Gln	Glu	Lys	Lys	Glu	Leu	Gln	Ile	Gln	Val	Glu	His
		115					120					125			
Tyr	Glu	Phe	Gln	Thr	Arg	Gln	Leu	Glu	Leu	Lys	Ala	Lys	Asn	Tyr	Ala
	130					135					140				
Asp	Gln	Ile	Ser	Arg	Leu	Glu	Glu	Arg	Glu	Ser	Glu	Met	Lys	Lys	Glu
145					150					155					160
Tyr	Asn	Ala	Leu	His	Gln	Arg	His	Thr	Glu	Met	Ile	Gln	Thr	Tyr	Val
				165					170					175	
Glu	His	Ile	Glu	Arg	Ser	Lys	Met	Gln	Gln	Val	Gly	Gly	Ser	Gly	Gln
		180						185					190		
Thr	Glu	Ser	Ser	Leu	Pro	Gly	Arg	Arg	Lys	Glu	Arg	Pro	Thr	Ser	Leu
		195					200					205			
Asn	Val	Phe	Pro	Leu	Ala	Asp	Gly	Met	Val	Arg	Ala	Gln	Met	Gly	Gly
	210					215					220				
Lys	Leu	Val	Pro	Ala	Gly	Asp	His	Trp	His	Leu	Ser	Asp	Leu	Gly	Gln
225					230					235					240
Leu	Gln	Ser	Ser	Ser	Ser	Tyr	Gln	Cys	Pro	Asn	Asp	Glu	Met	Ser	Glu
				245					250					255	
Ser	Gly	Gln	Ser	Ser	Ala	Ala	Ala	Thr	Pro	Ser	Thr	Thr	Gly	Thr	Lys
			260					265					270		
Ser	Asn	Thr	Pro	Thr	Ser	Ser	Val	Pro	Ser	Ala	Ala	Val	Thr	Pro	Leu
		275					280					285			
Asn	Glu	Ser	Leu	Gln	Pro	Leu	Gly	Asp	Tyr	Val	Ser	Val	Thr	Lys	Asn
	290					295					300				

Asn Lys Gln Ala Arg Glu Lys Arg Asn Ser Arg Asn Met Glu Val Gln
 305 310 315 320
 Val Thr Gln Glu Met Arg Asn Val Ser Ile Gly Met Gly Ser Ser Asp
 325 330 335
 Glu Trp Ser Asp Val Gln Asp Ile Ile Asp Ser Thr Pro Glu Leu Asp
 340 345 350
 Val Cys Pro Glu Thr Arg Leu Glu Arg Thr Gly Ser Ser Pro Thr Gln
 355 360 365
 Gly Ile Val Asn Lys Ala Phe Gly Ile Asn Thr Asp Ser Leu Tyr His
 370 375 380
 Glu Leu Ser Thr Ala Gly Ser Glu Val Ile Gly Asp Val Asp Glu Gly
 385 390 395 400
 Ala Asp Leu Leu Gly Glu Phe Ser Val Arg Asp Asp Phe Phe Gly Met
 405 410 415
 Gly Lys Glu Val Gly Asn Leu Leu Leu Glu Asn Ser Gln Leu Leu Glu
 420 425 430
 Thr Lys Asn Ala Leu Asn Val Val Lys Asn Asp Leu Ile Ala Lys Val
 435 440 445
 Asp Gln Leu Ser Gly Glu Gln Glu Val Leu Lys Gly Glu Leu Glu Ala
 450 455 460
 Ala Lys Gln Ala Lys Val Lys Leu Glu Asn Arg Ile Lys Glu Leu Glu
 465 470 475 480
 Glu Glu Leu Lys Arg Val Lys Ser Glu Ala Val Thr Ala Arg Arg Glu
 485 490 495
 Pro Arg Glu Glu Val Glu Asp Val Ser Ser Tyr Leu Cys Thr Glu Leu
 500 505 510
 Asp Lys Ile Pro Met Ala Gln Arg Arg Arg Phe Thr Arg Val Glu Met
 515 520 525
 Ala Arg Val Leu Met Glu Arg Asn Gln Tyr Lys Glu Arg Leu Met Glu
 530 535 540
 Leu Gln Glu Ala Val Arg Trp Thr Glu Met Ile Arg Ala Ser Arg Glu
 545 550 555 560
 His Pro Ser Val Gln Glu Lys Lys Lys Ser Thr Ile Trp Gln Phe Phe
 565 570 575
 Ser Arg Leu Phe Ser Ser Ser Ser Ser Pro Pro Pro Ala Lys Arg Ser
 580 585 590
 Tyr Pro Ser Val Asn Ile His Tyr Lys Ser Pro Thr Ala Ala Gly Phe
 595 600 605
 Ser Gln Arg Arg Ser His Ala Leu Cys Gln Ile Ser Ala Gly Ser Arg
 610 615 620

Pro Leu Glu Phe Phe Pro Asp Asp Asp Cys Thr Ser Ser Ala Arg Arg
 625 630 635 640
 Glu Gln Lys Arg Glu Gln Tyr Arg Gln Val Arg Glu His Val Arg Asn
 645 650 655
 Asp Asp Gly Arg Leu Gln Ala Cys Gly Trp Ser Leu Pro Ala Lys Tyr
 660 665 670
 Lys Gln Leu Ser Pro Asn Gly Gly Gln Glu Asp Thr Arg Met Lys Asn
 675 680 685
 Val Pro Val Pro Val Tyr Cys Arg Pro Leu Val Glu Lys Asp Pro Ser
 690 695 700
 Thr Lys Leu Trp Cys Ala Ala Gly Val Asn Leu Ser Gly Trp Lys Pro
 705 710 715 720
 His Glu Glu Asp Ser Ser Asn Gly Pro Lys Pro Val Pro Gly Arg Asp
 725 730 735
 Pro Leu Thr Cys Asp Arg Glu Gly Glu Gly Glu Pro Lys Ser Thr His
 740 745 750
 Pro Ser Pro Glu Lys Lys Lys Ala Lys Glu Thr Pro Glu Ala Asp Ala
 755 760 765
 Thr Ser Ser Arg Val Trp Ile Leu Thr Ser Thr Leu Thr Thr Ser Lys
 770 775 780
 Val Val Ile Ile Asp Ala Asn Gln Pro Gly Thr Ile Val Asp Gln Phe
 785 790 795 800
 Thr Val Cys Asn Ala His Val Leu Cys Ile Ser Ser Ile Pro Ala Ala
 805 810 815
 Ser Asp Ser Asp Tyr Pro Pro Gly Glu Met Phe Leu Asp Ser Asp Val
 820 825 830
 Asn Pro Glu Asp Ser Gly Ala Asp Gly Val Leu Ala Gly Ile Thr Leu
 835 840 845
 Val Gly Cys Ala Thr Arg Cys Asn Val Pro Arg Ser Asn Cys Ser Ser
 850 855 860
 Arg Gly Asp Thr Pro Val Leu Asp Lys Gly Gln Gly Asp Val Ala Thr
 865 870 875 880
 Thr Ala Asn Gly Lys Val Asn Pro Ser Gln Ser Thr Glu Glu Ala Thr
 885 890 895
 Glu Ala Thr Glu Val Pro Asp Pro Gly Pro Ser Glu Ser Glu Ala Thr
 900 905 910
 Thr Val Arg Pro Gly Pro Leu Thr Glu His Val Phe Thr Asp Pro Ala
 915 920 925
 Pro Thr Pro Ser Ser Ser Thr Gln Pro Ala Ser Glu Asn Gly Ser Glu
 930 935 940

Ser Asn Gly Thr Ile Val Gln Pro Gln Val Glu Pro Ser Gly Glu Leu
 945 950 955 960
 Ser Thr Thr Thr Ser Ser Ala Ala Pro Thr Met Trp Leu Gly Ala Gln
 965 970 975
 Asn Gly Trp Leu Tyr Val His Ser Ala Val Ala Asn Trp Lys Lys Cys
 980 985 990
 Leu His Ser Ile Lys Leu Lys Asp Ser Val Leu Ser Leu Val His Val
 995 1000 1005
 Lys Gly Arg Val Leu Val Ala Leu Ala Asp Gly Thr Leu Ala Ile Phe
 1010 1015 1020
 His Arg Gly Glu Asp Gly Gln Trp Asp Leu Ser Asn Tyr His Leu Met
 1025 1030 1035 1040
 Asp Leu Gly His Pro His His Ser Ile Arg Cys Met Ala Val Val Asn
 1045 1050 1055
 Asp Arg Val Trp Cys Gly Tyr Lys Asn Lys Val His Val Ile Gln Pro
 1060 1065 1070
 Lys Thr Met Gln Ile Glu Lys Ser Phe Asp Ala His Pro Arg Arg Glu
 1075 1080 1085
 Ser Gln Val Arg Gln Leu Ala Trp Ile Gly Asp Gly Val Trp Val Ser
 1090 1095 1100
 Ile Arg Leu Asp Ser Thr Leu Arg Leu Tyr His Ala His Thr His Gln
 1105 1110 1115 1120
 His Leu Gln Asp Val Asp Ile Glu Pro Tyr Val Ser Lys Met Leu Gly
 1125 1130 1135
 Thr Gly Lys Leu Gly Phe Ser Phe Val Arg Ile Thr Ala Leu Leu Ile
 1140 1145 1150
 Ala Gly Asn Arg Leu Trp Val Gly Thr Gly Asn Gly Val Val Ile Ser
 1155 1160 1165
 Ile Pro Leu Thr Glu Thr Val Val Leu His Arg Gly Gln Leu Leu Gly
 1170 1175 1180
 Leu Arg Ala Asn Lys Thr Ser Pro Thr Ser Gly Glu Gly Thr Arg Pro
 1185 1190 1195 1200
 Gly Gly Ile Ile His Val Tyr Gly Asp Asp Ser Ser Asp Lys Ala Ala
 1205 1210 1215
 Ser Ser Phe Ile Pro Tyr Cys Ser Met Ala Gln Ala Gln Leu Cys Phe
 1220 1225 1230
 His Gly His Arg Asp Ala Val Lys Phe Phe Val Ser Val Pro Gly Asn
 1235 1240 1245
 Val Leu Ala Thr Leu Asn Gly Ser Val Leu Asp Ser Pro Ser Glu Gly
 1250 1255 1260

Pro Gly Pro Ala Ala Pro Ala Ala Asp Ala Glu Gly Gln Lys Leu Lys
 1265 1270 1275 1280

Asn Ala Leu Val Leu Ser Gly Gly Glu Gly Tyr Ile Asp Phe Arg Ile
 1285 1290 1295

Gly Asp Gly Glu Asp Asp Glu Thr Glu Glu Cys Ala Gly Asp Val Asn
 1300 1305 1310

Gln Thr Lys Pro Ser Leu Ser Lys Ala Glu Arg Ser His Ile Ile Val
 1315 1320 1325

Trp Gln Val Ser Tyr Thr Pro Glu
 1330 1335

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 <212> PRT
 <213> Mouse

<400> 13
 Met Ser Gly Val Arg Pro Pro Ile Met Asn Gly Pro Met His Pro Arg
 1 5 10 15

Pro Leu Val Ala Leu Leu Asp Gly Arg Asp Cys Thr Val Glu Met Pro
 20 25 30

Ile Leu Lys Asp Val Ala Thr Val Ala Phe Cys Asp Ala Gln Ser Thr
 35 40 45

Gln Glu Ile His Glu Lys Val Leu Asn Glu Ala Val Gly Ala Leu Met
 50 55 60

Tyr His Thr Ile Thr Leu Thr Arg Glu Asp Leu Glu Lys Phe Lys Ala
 65 70 75 80

Leu Arg Ile Ile Val Arg Ile Gly Ser Gly Phe Asp Asn Ile Asp Ile
 85 90 95

Lys Ser Ala Gly Asp Leu Gly Ile Ala Val Cys Asn Val Pro Ala Ala
 100 105 110

Ser Val Glu Glu Thr Ala Asp Ser Thr Leu Cys His Ile Leu Asn Leu
 115 120 125

Tyr Arg Arg Thr Thr Trp Leu His Gln Ala Leu Arg Glu Gly Thr Arg
 130 135 140

Val Gln Ser Val Glu Gln Ile Arg Glu Val Ala Ser Gly Ala Ala Arg
 145 150 155 160

Ile Arg Gly Glu Thr Leu Gly Ile Ile Gly Leu Gly Arg Val Gly Gln
 165 170 175

Ala Val Ala Leu Arg Ala Lys Ala Phe Gly Phe Asn Val Leu Phe Tyr
 180 185 190

Asp Pro Tyr Leu Ser Asp Gly Ile Glu Arg Ala Leu Gly Leu Gln Arg
 195 200 205

Val Ser Thr Leu Gln Asp Leu Leu Phe His Ser Asp Cys Val Thr Leu
 210 215 220
 His Cys Gly Leu Asn Glu His Asn His His Leu Ile Asn Asp Phe Thr
 225 230 235 240
 Val Lys Gln Met Arg Gln Gly Ala Phe Leu Val Asn Thr Ala Arg Gly
 245 250 255
 Gly Leu Val Asp Glu Lys Ala Val Ala Gln Ala Leu Lys Glu Gly Arg
 260 265 270
 Ile Arg Gly Ala Ala Leu Asp Val His Glu Ser Glu Pro Phe Ser Phe
 275 280 285
 Ser Gln Gly Pro Leu Lys Asp Ala Pro Asn Leu Ile Cys Thr Pro His
 290 295 300
 Ala Ala Trp Tyr Ser Glu Gln Ala Ser Ile Glu Met Arg Glu Glu Ala
 305 310 315 320
 Ala Arg Glu Ile Arg Arg Ala Ile Thr Gly Arg Ile Pro Asp Ser Leu
 325 330 335
 Lys Asn Cys Val Asn Lys Asp His Leu Thr Ala Ala Thr His Trp Ala
 340 345 350
 Ser Met Asp Pro Ala Val Val His Pro Glu Leu Asn Gly Ala Ala Tyr
 355 360 365
 Ser Arg Tyr Pro Pro Gly Val Val Ser Val Ala Pro Thr Gly Ile Pro
 370 375 380
 Ala Ala Val Glu Gly Ile Val Pro Ser Ala Met Ser Leu Ser His Gly
 385 390 395 400
 Leu Pro Pro Val Ala His Pro Pro His Ala Pro Ser Pro Gly Gln Thr
 405 410 415
 Val Lys Pro Glu Ala Asp Arg Asp His Thr Ser Asp Gln Leu
 420 425 430

<210> 14
 <211> 1508
 <212> PRT
 <213> Mouse

<400> 14
 Met Met Ala Gly Glu Gly Ser Thr Ile Thr Ser Arg Ile Lys Asn Leu
 1 5 10 15
 Leu Arg Ser Pro Ser Ile Lys Leu Arg Arg Ser Lys Ala Gly Asn Arg
 20 25 30
 Arg Glu Asp Leu Ser Ser Lys Val Thr Leu Glu Lys Val Leu Gly Val
 35 40 45
 Thr Val Ser Gly Gly Arg Gly Leu Ala Cys Glu Pro Arg Ser Gly Leu

50	55	60
Val Ala Tyr Pro Ala Gly Cys Val Val Val Leu Phe Asn Pro Arg Lys 65 70 75 80		
His Lys Gln His His Ile Leu Asn Ser Ser Arg Lys Thr Ile Thr Ala 85 90 95		
Leu Ala Phe Ser Pro Asp Gly Lys Tyr Leu Val Thr Gly Glu Ser Gly 100 105 110		
His Met Pro Ala Val Arg Val Trp Asp Val Ala Glu Arg Ser Gln Val 115 120 125		
Ala Glu Leu Gln Glu His Lys Tyr Gly Val Ala Cys Val Ala Phe Ser 130 135 140		
Pro Ser Ala Lys Tyr Ile Val Ser Val Gly Tyr Gln His Asp Met Ile 145 150 155 160		
Val Asn Val Trp Ala Trp Lys Lys Asn Ile Val Val Ala Ser Asn Lys 165 170 175		
Val Ser Ser Arg Val Thr Ala Val Ser Phe Ser Glu Asp Cys Ser Tyr 180 185 190		
Phe Val Thr Ala Gly Asn Arg His Ile Lys Phe Trp Tyr Leu Asp Asp 195 200 205		
Ser Lys Thr Ser Lys Val Asn Ala Thr Val Pro Leu Leu Gly Arg Ser 210 215 220		
Gly Leu Leu Gly Glu Leu Arg Asn Asn Leu Phe Thr Asp Val Ala Cys 225 230 235 240		
Gly Arg Gly Glu Lys Ala Asp Ser Thr Phe Cys Ile Thr Ser Ser Gly 245 250 255		
Leu Leu Cys Glu Phe Ser Asp Arg Arg Leu Leu Asp Lys Trp Val Glu 260 265 270		
Leu Arg Asn Thr Asp Ser Phe Thr Thr Thr Val Ala His Cys Ile Ser 275 280 285		
Val Thr Gln Glu Tyr Ile Phe Cys Gly Cys Ala Asp Gly Thr Val Arg 290 295 300		
Leu Phe Asn Pro Ser Asn Leu His Phe Leu Ser Thr Leu Pro Arg Pro 305 310 315 320		
His Ala Leu Gly Thr Asp Ile Ala Ser Ile Thr Glu Ala Ser Arg Leu 325 330 335		
Phe Ser Gly Gly Val Asn Ala Arg Tyr Pro Asp Thr Ile Ala Leu Thr 340 345 350		
Phe Asp Pro Thr Asn Gln Trp Leu Ser Cys Val Tyr Asn Asp His Ser 355 360 365		
Ile Tyr Val Trp Asp Val Arg Asp Pro Lys Lys Val Gly Lys Val Tyr		

370		375		380
Ser Ala Leu Tyr His	Ser Ser Cys Val Trp	Ser Val Glu Val Tyr Pro		
385	390	395	400	
Glu Ile Lys Asp Ser	His Gln Ala Cys Leu	Pro Leu Ser Ser Phe Ile		
	405	410	415	
Thr Cys Ser Ser Asp	Asn Thr Ile Arg Leu	Trp Asn Thr Glu Ser Ser		
	420	425	430	
Gly Val His Gly Ser	Thr Leu His Arg Asn	Ile Leu Ser Asn Asp Leu		
	435	440	445	
Ile Lys Ile Ile Tyr	Val Asp Gly Asn Thr	Gln Ala Leu Leu Asp Thr		
	450	455	460	
Glu Leu Pro Gly Gly	Asp Lys Ala Asp Gly	Ser Leu Met Asp Pro Arg		
	465	470	475	480
Val Gly Ile Arg Ser	Val Cys Ile Ser Pro	Asn Gly Gln His Leu Ala		
	485	490	495	
Ser Gly Asp Arg Met	Gly Thr Leu Arg Ile	His Glu Leu Gln Ser Leu		
	500	505	510	
Ser Glu Met Leu Lys	Val Glu Ala His Asp	Ser Glu Ile Leu Cys Leu		
	515	520	525	
Glu Tyr Ser Lys Pro	Asp Thr Gly Leu Lys	Leu Leu Ala Ser Ala Ser		
	530	535	540	
Arg Asp Arg Leu Ile	His Glu Leu Asp Ala	Gly Arg Glu Tyr Ser Leu		
	545	550	555	560
Gln Gln Thr Leu Asp	Glu His Ser Ser Ser	Ile Thr Ala Val Lys Phe		
	565	570	575	
Ala Ala Ser Asp Gly	Gln Val Arg Met Ile	Ser Cys Gly Ala Asp Lys		
	580	585	590	
Ser Ile Tyr Phe Arg	Thr Ala Gln Lys Ser	Gly Glu Gly Val Gln Phe		
	595	600	605	
Thr Arg Thr His His	Val Val Arg Lys Thr	Thr Leu Tyr Asp Met Asp		
	610	615	620	
Val Glu Pro Ser Trp	Lys Tyr Thr Ala Ile	Gly Cys Gln Asp Arg Asn		
	625	630	635	640
Ile Arg Ile Phe Asn	Ile Ser Ser Gly Lys	Gln Lys Lys Leu Phe Lys		
	645	650	655	
Gly Ser Gln Gly Glu	Asp Gly Thr Leu Ile	Lys Val Gln Thr Asp Pro		
	660	665	670	
Ser Gly Ile Tyr Ile	Ala Thr Ser Cys Ser	Asp Lys Asn Leu Ser Ile		
	675	680	685	
Phe Asp Phe Ser Ser	Gly Glu Cys Val Ala	Thr Met Phe Gly His Ser		

690	695	700														
Glu 705	Ile	Val	Thr	Gly	Met 710	Lys	Phe	Ser	Asn	Asp 715	Cys	Lys	His	Leu	Ile 720	
Ser	Val	Ser	Gly	Asp 725	Ser	Cys	Ile	Phe	Val 730	Trp	Arg	Leu	Ser	Ser	Glu 735	
Met	Thr	Ile	Ser 740	Met	Arg	Gln	Arg	Leu 745	Arg	Glu	Arg	Arg	Gln 750	Arg	Gln	
Arg	Gly	Ile 755	Lys	Gln	Gln	Gly	Pro 760	Thr	Ser	Pro	Gln	Arg 765	Ala	Ser	Gly	
Ala	Lys 770	Gln	His	His	Ala	Pro 775	Val	Val	Pro	Pro	Ser	Gly	Pro	Ala	Leu	
Ser 785	Ser	Asp	Ser	Asp	Lys 790	Glu	Gly	Glu	Asp	Glu 795	Gly	Thr	Glu	Glu	Glu 800	
Glu	Leu	Pro	Ala	Leu 805	Pro	Ile	Leu	Ser	Lys 810	Ser	Thr	Lys	Lys	Glu 815	Leu	
Ala	Ser	Gly	Ser 820	Ser	Pro	Ala	Leu	Leu	Arg 825	Ser	Leu	Ser	His 830	Trp	Glu	
Met	Ser 835	Arg	Ala	Gln	Glu	Thr	Met 840	Glu	Tyr	Leu	Asp	Pro 845	Ala	Pro	Val	
Ala 850	Asn	Thr	Gly	Pro	Lys	Arg 855	Arg	Gly	Arg	Trp	Ala	Gln	Pro	Gly	Val	
Glu 865	Leu	Ser	Val	Arg	Ser 870	Met	Leu	Asp	Leu	Arg 875	Gln	Ile	Glu	Thr	Leu 880	
Ala	Pro	Ser	Pro	Arg 885	Gly	Pro	Ser	Gln	Asp 890	Ser	Leu	Ala	Val	Ser	Pro 895	
Ala	Gly	Pro	Gly 900	Lys	His	Gly	Pro	Gln 905	Ala	Pro	Glu	Leu	Ser	Cys	Val 910	
Ser	Gln	Asn 915	Glu	Arg	Ala	Pro	Arg 920	Leu	Gln	Thr	Ser	Gln 925	Pro	Cys	Ser	
Cys 930	Pro	Asp	Ile	Ile	Gln	Leu 935	Leu	Ser	Gln	Glu	Glu	Gly	Val	Phe	Ala	
Gln 945	Asp	Leu	Glu	Pro	Ala 950	Pro	Ile	Glu	Asp	Gly 955	Ile	Val	Tyr	Pro	Glu 960	
Pro	Ser	Asp	Ser	Pro 965	Thr	Met	Asp	Thr	Ser 970	Ala	Phe	Gln	Val	Gln	Ala 975	
Pro	Thr	Gly	Gly 980	Ser	Leu	Gly	Arg	Met 985	Tyr	Pro	Gly	Ser	Arg 990	Gly	Ser	
Glu	Lys	His 995	Ser	Pro	Asp	Ser	Ala 1000	Cys	Ser	Val	Asp	Tyr 1005	Ser	Ser	Ser	
Arg	Leu	Ser	Ser	Pro	Glu	His	Pro	Asn	Glu	Asp	Ser	Glu	Ser	Thr	Glu	

1010	1015	1020
Pro Leu Ser Val Asp Gly Ile Ser Ser Asp Leu Glu Glu Pro Ala Glu		
1025	1030	1035 1040
Gly Asp Glu Asp Glu Glu Glu Glu Gly Gly Thr Gly Leu Cys Gly Leu		
	1045	1050 1055
Gln Glu Gly Gly Pro Arg Thr Pro Asp Gln Glu Gln Phe Leu Lys Gln		
	1060	1065 1070
Leu Phe Glu Thr Leu Ala Asn Gly Thr Ala Pro Gly Gly Pro Ala Arg		
	1075	1080 1085
Val Leu Glu Arg Thr Glu Ser Arg Ser Ile Ser Ser Arg Phe Leu Leu		
	1090	1095 1100
Gln Val Gln Thr Leu Pro Leu Arg Glu Pro Ser Leu Ser Ser Ser Gly		
	1105	1110 1115 1120
Leu Ala Leu Thr Ser Arg Pro Asp Gln Val Ser Gln Val Ser Gly Glu		
	1125	1130 1135
Gln Leu Lys Gly Ser Gly Ala Thr Pro Pro Gly Ala Pro Pro Glu Met		
	1140	1145 1150
Glu Pro Ser Ser Gly Asn Ser Gly Pro Lys Gln Val Ala Pro Val Leu		
	1155	1160 1165
Leu Thr Arg Arg Arg Asn Asn Leu Asp Asn Ser Trp Ala Ser Lys Lys		
	1170	1175 1180
Met Ala Ala Thr Arg Pro Leu Ala Gly Leu Gln Lys Ala Gln Ser Val		
	1185	1190 1195 1200
His Ser Leu Val Pro Gln Asp Glu Val Pro Ser Ser Arg Pro Leu Leu		
	1205	1210 1215
Phe Arg Glu Ala Glu Thr Gln Gly Ser Leu Gly Ser Leu Pro Gln Ala		
	1220	1225 1230
Gly Gly Cys Ser Ser Gln Pro His Ser Tyr Gln Asn His Thr Thr Ser		
	1235	1240 1245
Ser Met Ala Lys Leu Ala Arg Ser Ile Ser Val Gly Glu Asn Pro Gly		
	1250	1255 1260
Leu Ala Thr Glu Pro Gln Ala Pro Ala Pro Ile Arg Ile Ser Pro Phe		
	1265	1270 1275 1280
Asn Lys Leu Ala Leu Pro Ser Arg Ala His Leu Val Leu Asp Ile Pro		
	1285	1290 1295
Lys Pro Leu Pro Asp Arg Pro Thr Leu Thr Thr Phe Ser Pro Val Ser		
	1300	1305 1310
Lys Gly Leu Thr His Asn Glu Thr Glu Gln Ser Gly Pro Leu Arg Glu		
	1315	1320 1325
Pro Arg Lys Ala His Thr Thr Val Glu Lys His Ser Cys Leu Gly Glu		

1330 1335 1340
 Gly Thr Thr His Lys Ser Arg Thr Glu Cys Gln Ala Tyr Pro Gly Pro
 1345 1350 1355 1360
 Asn His Pro Cys Arg Gln Gln Leu Pro Val Asn Asn Leu Leu Gln Ala
 1365 1370 1375
 Glu Ser Leu Gln Pro Leu Ser Pro Glu Lys Thr Arg Asn Pro Val Glu
 1380 1385 1390
 Ser Ser Arg Pro Gly Val Ala Leu Ser Gln Asp Ser Glu Leu Ala Leu
 1395 1400 1405
 Ser Leu Gln Gln Cys Glu Gln Leu Val Ala Glu Leu Gln Gly Asn Val
 1410 1415 1420
 Arg Gln Ala Val Glu Leu Tyr Arg Ala Val Thr Ser Cys Lys Thr Pro
 1425 1430 1435 1440
 Ser Ala Glu Gln Ser His Ile Thr Arg Leu Leu Arg Asp Thr Phe Ser
 1445 1450 1455
 Pro Val Arg Gln Glu Leu Glu Val Leu Ala Gly Ala Val Leu Ser Ser
 1460 1465 1470
 Pro Gly Gly Ser Pro Gly Ala Val Ala Ala Glu Gln Thr Gln Ala Leu
 1475 1480 1485
 Leu Glu Gln Tyr Ser Glu Leu Leu Leu Arg Ala Val Glu Arg Arg Met
 1490 1495 1500
 Glu Arg Arg Leu
 1505

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 <211> 244
 <212> PRT
 <213> Mouse

<400> 15
 Ser Ser Lys Tyr Ser Asn Glu Ser Arg Ser Gln Ala Asp Ser Gly Phe
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 Leu Gly Leu Arg Pro Thr Ser Val Asp Pro Ala Leu Arg Arg Arg Arg
 20 25 30
 Arg Gly Pro Arg Asn Lys Lys Arg Gly Trp Arg Arg Leu Ala Glu Glu
 35 40 45
 Pro Leu Gly Leu Glu Val Asp Gln Phe Leu Glu Asp Val Arg Leu Gln
 50 55 60
 Glu Arg Thr Thr Gly Gly Leu Leu Ala Glu Ala Pro Asn Glu Lys Leu
 65 70 75 80
 Phe Phe Val Asp Thr Gly Phe Lys Arg Lys Glu Pro Arg Lys Lys Arg
 85 90 95

Thr Leu Val Gln Lys Lys Ser Gln Arg Leu Gln Lys Pro Leu Arg Val
 100 105 110
 Asp Leu Ala Leu Glu Asn His Ser Lys Ile Pro Ala Pro Lys Asp Ile
 115 120 125
 Leu Ala His Gln Val Pro Asn Ala Lys Lys Leu Arg Arg Lys Glu Glu
 130 135 140
 Leu Trp Glu Lys Leu Ala Lys Gln Gly Glu Leu Pro Arg Asp Val Arg
 145 150 155 160
 Lys Ala Gln Ala Arg Leu Leu Ser Pro Pro Thr Pro Lys Ala Lys Pro
 165 170 175
 Gly Pro Gln Asp Ile Ile Glu Arg Pro Phe Tyr Asp Leu Trp Asn Pro
 180 185 190
 Asp Asn Pro Leu Asp Thr Pro Leu Ile Gly Gln Asp Ala Phe Phe Leu
 195 200 205
 Glu Gln Thr Lys Lys Lys Gly Val Arg Arg Pro Gln Arg Leu His Ile
 210 215 220
 Lys Pro Ser Gln Val Pro Ala Val Glu Val Ile Pro Ala Gly Ala Ser
 225 230 235 240
 Tyr Asn Pro Thr

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 <211> 484
 <212> PRT
 <213> Mouse

<400> 16
 Met Ala Ala Gly Gly Asn Arg Asp Gly Glu Lys Arg Gly Ser Arg Ser
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 Gln Ala Asp Ser Gly Phe Leu Gly Leu Arg Pro Thr Ser Val Asp Pro
 20 25 30
 Ala Leu Arg Arg Arg Arg Arg Gly Pro Arg Asn Lys Lys Arg Gly Trp
 35 40 45
 Arg Arg Leu Ala Glu Glu Pro Leu Gly Leu Glu Val Asp Gln Phe Leu
 50 55 60
 Glu Asp Val Arg Leu Gln Glu Arg Thr Thr Gly Gly Leu Leu Ala Glu
 65 70 75 80
 Ala Pro Asn Glu Lys Leu Phe Phe Val Asp Thr Gly Phe Lys Arg Lys
 85 90 95
 Glu Pro Arg Lys Lys Arg Thr Leu Val Gln Lys Lys Ser Gln Arg Leu
 100 105 110
 Gln Lys Pro Leu Arg Val Asp Leu Ala Leu Glu Asn His Ser Lys Ile
 115 120 125

Pro Ala Pro Lys Asp Ile Leu Ala His Gln Val Pro Asn Ala Lys Lys
 130 135 140
 Leu Arg Arg Lys Glu Glu Leu Trp Glu Lys Leu Ala Lys Gln Gly Glu
 145 150 155 160
 Leu Pro Arg Asp Val Arg Lys Ala Gln Ala Arg Leu Leu Ser Pro Pro
 165 170 175
 Thr Pro Lys Ala Lys Pro Gly Pro Gln Asp Ile Ile Glu Arg Pro Phe
 180 185 190
 Tyr Asp Leu Trp Asn Pro Asp Asn Pro Leu Asp Thr Pro Leu Ile Gly
 195 200 205
 Gln Asp Ala Phe Phe Leu Glu Gln Thr Lys Lys Lys Gly Val Arg Arg
 210 215 220
 Pro Gln Arg Leu His Ile Lys Pro Ser Gln Val Pro Ala Val Glu Val
 225 230 235 240
 Ile Pro Ala Gly Ala Ser Tyr Asn Pro Thr Phe Glu Asp His Gln Ala
 245 250 255
 Leu Leu Arg Glu Ala His Glu Val Glu Leu Gln Arg Glu Lys Glu Ala
 260 265 270
 Glu Lys Leu Glu Arg Gln Leu Ala Leu Pro Thr Ser Glu Gln Ala Ala
 275 280 285
 Thr Gln Glu Ser Val Phe Arg Glu Met Cys Glu Gly Leu Leu Glu Glu
 290 295 300
 Ser Asp Gly Glu Asp Glu His Glu Ala Gly Arg Ala Gly Gln Pro Glu
 305 310 315 320
 Ala Gly Asp Gly Thr Thr Glu Ile Ser Pro Thr Gly Ala Ala Gly Pro
 325 330 335
 Glu Lys Arg Met Glu Lys Lys Thr Glu Gln Gln Arg Arg Arg Glu Lys
 340 345 350
 Ala Ala Arg Lys Leu Arg Val Gln Gln Ala Ala Leu Arg Ala Ala Arg
 355 360 365
 Leu Gln His Gln Glu Leu Phe Arg Leu Arg Gly Ile Lys Ala Gln Val
 370 375 380
 Ala Arg Arg Leu Ala Glu Leu Ala Arg Arg Arg Glu Gln Arg Arg Ile
 385 390 395 400
 Arg Arg Leu Ala Glu Ala Asp Lys Pro Arg Arg Leu Gly Arg Leu Lys
 405 410 415
 Tyr Gln Ala Pro Asp Ile Asp Val Gln Leu Ser Ser Glu Leu Ser Gly
 420 425 430
 Ser Leu Arg Thr Leu Lys Pro Glu Gly His Ile Leu Arg Asp Arg Phe
 435 440 445

Lys Ser Phe Gln Lys Arg Asn Met Ile Glu Pro Arg Glu Arg Ala Lys
450 455 460

Phe Lys Arg Lys Tyr Lys Val Lys Leu Val Glu Lys Arg Ala Tyr Arg
465 470 475 480

Glu Ile Gln Leu

<210> 17

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 17

tagatatcgc cttggaacaa gagaaga 27

<210> 18

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 18

atgaattctc agttgttctt tgtgacactg a

31